TECHNICAL NOTES

U. S. DEPARTMENT OF AGRICULTURE **IOWA STATE OFFICE**

NATURAL RESOURCES CONSERVATION SERVICE **DES MOINES, IOWA**

Agronomy #28

Date: October 15, 2003

Subject: IOWA ECOTYPE PLANTING GUIDANCE

This technical note is to be used in preparing native seeding mixtures for prairie reconstruction. It includes recommendations of native grass cultivar plantings by Major Land Resource Area (MLRA). When the objectives of the client and/or the location of the site is close to a prairie remnant, local Ecotype or Source Identified seed is to be used. This Technical Note includes Iowa Ecotype Plants released to Growers. In all cases, Natural Resources Conservation Service Field Office Technical Guide, Conservation Cover – 327 Standard will be followed in developing seeding mixtures.

/s/ James E. Ayen
State Resource Conservationist

Guidance for Seeding Natives on Prairie Reconstruction Sites

This guidance is provided to assist in the development of seeding plans designed with specific cultivars that fit the major landform resources areas to ensure selection of cultivars that are well suited for the desired site. It also provides guidance for prairie reconstruction sites where the objectives of the client is to seed species that are source identified as Iowa Natives or for sites that are within one mile radius of known publicly owned prairie remnants identified in the Iowa's State Preserves. Additional information can be found at the Department of Natural Resources website: http://www.state.ia.us/dnr/organiza/ppd/preserves.htm. This method of tailoring seeding mixtures to source of origin does a much better job of providing a diverse mixture that reduces the risk of introducing natives outside of their zone of origin that may become aggressive and invasive.

Establishment of diverse vegetation on prairie reconstruction sites will help attain ecological benefits as well as help preserve a rare and declining habitat. A well thought out revegetation plan and installation process is critical to the most effective use of program and client resources. In all cases the NRCS Field Office Technical Guide, Conservation Cover – 327 Standard will be followed.

Table 1 provides a list of recommended native grass cultivars available in Iowa and Table 2 provides a list of recommended native forb cultivars available in Iowa. Each of the cultivars are given an adaptation rating 1-3 for each of the MLRA regions as follows:

1 - considered adapted and well suited,
2 - considered adapted but not as well suited as one with a rating of 1, and
3 - considered unadapted and not recommended.

Table 3 is a list of Iowa Ecotype plants that have been released to growers. Iowa Ecotype are Source Identified seed that are known to have been collected from one of the three Iowa Eco-type zones (Figure A). The Source Identified Program, established in 1994, is a program managed by the Iowa Crop Improvement Association (ICIA). These seeds from certified "Source Identified" plants are not based upon genetic standards. Instead, as the name indicates, it provides a method for seed growers to certify the seed's collection source for the assurance of the client. This assurance is important to consumers since many native plants and seeds on the market do not have a guarantee of their place of origin. When a consumer purchases seed labeled with a Source Identified yellow label, they can be confident of its geographic and area of adaptation.

The Source Identified Program in Iowa is comprised of two components: seed collected privately and seed collected for the Iowa Ecotype Project. All of the seed certified in the Source Identified Program has been collected from native sites. These sites, remnants of the vast prairie that covered our state, are scattered all across Iowa.

The biggest component of seed in the Source Identified program is that which was privately collected. Hours of work go into locating and identifying a native site, receiving approval for the collection of seed, and then the harvest and cleaning of seed. Typically, another season or more is required to increase the seed to a marketable quantity. An applicant applying for certification of privately collected seed is required to send a "Germplasm Collection Form." This form documents the specific location that the seed was collected from. An ICIA inspector checks the site to verify that it is "native". The privately collected species listed can be found in the most recent Iowa Seed Directory from the ICIA. See ICIA website for latest Iowa Seed Directory at http://www.agron.iastate.edu/ICIA/.

The second component of seed in the program is part of the Iowa Ecotype Project. The Iowa Ecotype Project was started in 1990. Its purpose is to provide a commercially available seed supply of native prairie plants of Iowa origin. For the purposes of the project, Iowa is divided into three zones, north to south, with about three tiers of counties in each zone. See Figure A. Parent seed is collected from Iowa remnant prairie communities in each of these zones, increased initially at the regional USDA-NRCS Plant Materials Center in Elsberry, MO, and subsequently released to qualified native seed growers in or very near to Iowa. When applying for certification, seed growers receiving and planting this seed submit a tag they receive from the Plant Materials Center to document the origin of the seed and the zone in which it was collected. The seed in the Iowa Ecotype Project is identified under the Collection Information according to the zone in which it was collected.

The Source Identified Program has grown significantly since its conception. Each year, new species have been added and the number of acres inspected has increased. For more information about the Iowa Ecotype Project, contact Greg Houseal at 319-273-2813. For a complete list of seed growers for Source Identified Seed see the Iowa Seed Directory published by the Iowa Crop Improvement Association for the current year available at http://www.agron.iastate.edu/ICIA/.

Table 1. Recommended Native Grass Cultivars Forage (Column A) & Wildlife (Column B) By MLRA

Local Ecotypes are always the most adapted and well suited and when available are recommended source for seed mixtures.

Grasses

			Major Land Resource Area/Land Use																	
			102A		103		104		105		107A		107B		108C		108D		109	
Species[1]	Cultivar	Origin	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Big bluestem	Bonilla	SD	2	3	2	3	2	3	2	3	2	3	3	3	2	3	2	3	2	3
	Niagra	NY	3	3	3	3	2	3	2	3	3	3	3	3	2	3	3	3	3	3
	Roundtree	W-IA	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
	Pawnee	NE	2	3	1	2	1	3	1	3	1	2	1	2	1	2	1	2	1	2
	Kaw	E-KS	3	3	2	3	2	3	2	3	2	3	1	2	1	2	1	2	1	2
Indiangrass	Holt	NE	1	2	2	3	2	3	2	3	1	2	2	3	2	3	2	3	2	3
	Nebraska 54	NE	2	3	2	3	3	3	3	3	2	3	2	3	2	3	2	3	2	3
	Oto	KS-NE	2	3	1	2	1	3	1	3	1	2	1	2	1	2	1	2	1	2
	Rumsey	IL	3	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3
	Cheyenne	OK	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Switchgrass	Sunburst	SE-SD	1	3	2	3	2	3	2	3	2	3	3	3	3	3	3	3	3	3
	Summer	SE-NE	1	3	1	3	2	3	2	3	2	3	2	2	2	2	2	2	2	2
	Cave-In-Rock	S-IL	2	3	1	3	1	2	1	2	2	3	1	2	1	2	1	2	1	2
	Pathfinder	KS-NB	1	3	1	3	2	3	2	3	1	2	1	2	1	2	1	3	1	3
	Trailblazer	KS-NB	1	3	1	3	2	3	2	3	1	2	1	2	1	2	1	3	1	3
	Blackwell	OK	3	3	2	3	1	3	2	3	2	3	1	3	1	3	1	3	1	3
	Nebraska 28	NE	2	3	2	3	2	3	3	3	2	3	2	3	2	2	2	2	2	3
Sideoats grama	Butte	NE	2	3	2	3	2	3	2	3	2	3	3	3	3	3	3	3	3	3
	Trailway	NE	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3
	El Reno	OK	3	3	3	3	3	3	3	3	3	3	2	3	2	3	2	3	2	3
Little bluestem	Blaze	NE & KS	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3
	Aldous	E-KS	3	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3
	Cimmaron	SW-KS,OK	3	3	3	3	1	2	3	3	3	3	3	3	3	3	3	3	3	3
Eastern gamagrass	Pete	KS	2	3	2	3	2	3	2	3	2	3	1	2	1	2	1	2	1	2
	Iuka	KS	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Adaptation Ratings

1 Adapted and well suited on sites where species is recommended.
2 Adapted but not as well suited as 1.
3 Unadapted or no information available, not recommended.

Footnotes

[1] For species not listed, local Ecotypes are always the most adapted and well suited and when available are recommended source for seed.

Table 2. Recommended Native Forbs And Legume Cultivars By MLRA

Forbs and Legumes

		Major Land Resource Area/Land Use															
		102		103		104		105		107N[2]		107S[2]		108		109	
Species[1]	Cultivar	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Purple prairie clover	Kaneb	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3
Maximillian sunflower	Prairie Gold	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3
Ox-eye sunflower	Midas	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3
Gray-headed coneflower	sunglow	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3
Tall blazing star	Eureka	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3

Adaptation Ratings

1 Adapted and well suited cultivar on sites where species is recommended.
2 Adapted but not as well suited as 1.
3 Unadapted, not recommended.

Footnotes

[1] For species not listed, local Ecotypes are always the most adapted and well suited and when available are recommended source for seed.
[2] Major land resource area 107 has been divided into north and south regions at U.S. Highway 20.

Table 3. Iowa Eco-Type Plants Released To Growers as of October 2003

Species	Zone 1	Zone 2	Zone 3
MLRA	102, 103, 104, 105, 107A	103, 104, 107B, 108	107B, 108, 109
Tall Grasses			
Big bluestem, *Andropogon gerardii*	A, C	A, C	A ,C
Canada wildrye, *Elymus canadensis*	A, C	A, C	A, C
Indiangrass, *Sorghastrum nutans*	A, C	A, C	A, C
Short Grasses			
Little bluestem, *Schizachyrium scoparium*	A, C	A, C	A, C
Sideoats grama, *Bouteloua curtipendula*	A, C	A, C	A, C
Tall dropseed, *Sporobolus asper*	A, C	A, C	A, C
Tall Forbes and Legumes			
Oxeye false sunflower, *Heliopsis helianthoides*	A, C	A, C	A
Rattlesnake master, *Eryngium yuccifolium*	A, C	A, C	A
Stiff goldenrod, *Solidago rigida*	A, C	A, C	A, C
Short Forbes and Legumes			
Blazing star, *Liatria pycnostachya*	A, C	A, C	A
Great Blue Lobelia, *Lobelia siphilitiaca*	A, C	--	--
New England aster, *Aster novac-angliae*	A, C	--	A, C
Purple prairie clover, *Dalea purpurea*	A, C	A, C	A, C
Pale purple coneflower, *Echinacea pallida*	A, C	A, C	--
Round-head bushclover, *Lespedeza capitata*	A, C	A, C	A, C

A = Allocated to grower C = Commercially Available

Origin of Species was from multiple collections from within the zone. See zone map on following page.
Adaptation of the listed species for the listed MLRA's in that zone.

Map Iowa Eco-Type Zones